

APPENDIX A

**COMMENTS AND RESPONSES ON THE
DRAFT ENVIRONMENTAL ASSESSMENT FOR THE NON-THERMAL
TREATMENT OF HANFORD SITE LOW-LEVEL MIXED WASTE**

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Oregon

John A. Kitzhaber, M.D., Governor

DOE/EA-1189

Department of Consumer and Business Services

Office of Energy

625 Marion St. NE

Salem, OR 97310-0830

Phone: (503) 378-4040

Toll Free: 1-800-221-8035

FAX: (503) 373-7806

Web site: www.cbs.state.or.us/external/oeo/

September 11, 1998

Mr. Paul F.X. Dunigan, Jr.
NEPA Compliance Officer
Department of Energy
Richland Operations Office
PO Box 550
Richland, Washington 99352

Re: Oregon Office of Energy's comments on the Draft Environmental Assessment for
The Non-Thermal Treatment of Hanford Site Low-Level Mixed Waste, Hanford
Site, Richland Washington

Dear Mr. Dunnigan,

Thank you for the opportunity to comment on the Draft Environmental Assessment for
The Non-Thermal Treatment of Hanford Site Low-Level Mixed Waste. The citizens of
Oregon are vitally affected by and interested in the clean up of Hanford and appreciate
the chance to participate in the decisions involving this project.

Attached are our specific comments on this draft environmental assessment. Should you
have any questions, please contact Doug Huston of my staff at (503)378-4456.

Sincerely,

Mary Lou Blazek
Administrator, Nuclear Safety Division
Oregon Office of Energy

cc: Ms. Donna Powauke - Nez Perce Tribe
Mr. A. Conklin - Washington Dept. of Health
Mr. J. R. Wilkerson - CTUIR
Mr. Michael Wilson - Washington Ecology
Mr. Douglas Sherwood - EPA
Mr. Russell Jim - Yakama Nation

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DOE-RL/ALOC



**Oregon Office of Energy Comments On Draft Environmental Assessment for The
Non-Thermal Treatment of Hanford Site Low-Level Mixed Waste, Hanford Site,
Richland Washington**
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Section 1.1 needs more clarification on the 2600 cubic meters (m^3) selected for evaluation. Since the paragraph states that it is uncertain which waste packages would be selected for treatment, and waste characteristics may vary depending on the package, this section needs more discussion as to why this particular hypothetical 2600 m^3 of waste makes an acceptable, conservative volume of waste for this assessment.

Section 4.2 states that the total number of employees at the site would be 200 with 100 involved in Low Level Waste processing and 100 involved in Low Level Mixed Waste (LLMW) processing. However, the paragraph then states that 40 people will be involved directly with the LLMW and 10 people would be indirectly involved. What would be the function of the remaining 50 people? This paragraph needs to be clarified.

It is unclear why a two step process was used to determine air emission estimates in Section 5.1.1. Why weren't the estimates in the ATG risk assessment work plan for the non-thermal treatment facility used directly? This needs to be clarified.

The Surplus Plutonium Disposition Draft Environmental Impact Statement states that no lead emission sources had been identified at Hanford. However, Table S.1 indicates that the non-thermal treatment facility would be a source of lead emission. We recommend that this information be communicated to Mr. Howard Canter, Acting Director, Office of Fissile Materials Disposition.

Section 5.1.2.1 states that waste containers will have surface radiation doses up to 200 mrem/hr while Section 1.1 defines contact-handled LLMW as waste in containers with surface radiation doses of less than 200 mrem/hr. These inconsistencies need to be corrected.

Section 5.1.2.1 states: "The model default parameters provide a bounding population estimate for some on-site portions of the transport route where the Hanford Site workforce population is lower." How do the model default parameters relate to the remainder of the on-site portions of the transport route and what analysis was done for the off-site portions of the transport route? We recommend these questions be answered in the Environmental Assessment.

Section 5.1.2.2 assumes only 50% of container contents are spilled in a transportation accident and are available to burn. We recommend including some information justifying 50% rather than assuming 100% of the container contents are spilled.

**Oregon Office of Energy Comments On Draft Environmental Assessment for The
Non-Thermal Treatment of Hanford Site Low-Level Mixed Waste, Hanford Site,
Richland Washington**
Page 2 of 2

We recommend information be included on what criteria were used to "provide a conservative prediction of potential health effects" as discussed in Section 5.1.2.2, page 28. For example: Were the possible chronic health effects considered or just the acute effects?

The final footnote for Tables 5.3 and 5.4 does not appear to refer to anything in the tables. We recommend this be clarified.

The Involved Worker Radiological Consequences from Normal Operations portion of Section 5.2.1 states the dose-to-risk conversion factor used to calculate the Latent Cancer Fatality risk was taken from the 1990 recommendations of the International Commission on Radiological Protection. The Non-Involved Worker and General Public Radiological Consequences from Normal Operations section references the 1977 version of the same document. The reason for this difference needs to be clarified.

The Non-Involved Worker and General Public Radiological Consequences from Normal Operations portion Section 5.2.1 states that the radionuclide source term used was based on a production rate of 870 cubic meters per year. Include in this section the basis for this number.

In several places the Environmental Assessment (EA) explains release fractions for combustible materials are based on experimental data obtained when various types of packaged waste contaminated with various substances was burned. We recommend that you include in the EA a discussion of how well this surrogate waste and the experimental conditions correlate to the actual waste and the actual conditions. Also, include a discussion on what assumptions were made to off-set any non-conservative differences between the actual situation and the experimental set up.

Section 5.2.1 does not discuss chemical consequences to involved workers from normal operation. Paragraph two of this section contains the statement: "Risk to the involved workers would be from direct exposure to radiation from non-thermal treatment operations during the day. Chemical and radiological emissions are from a stack, and it is therefore assumed that the plume passes overhead." We recommend that a discussion of the consequences of handling the chemicals to be used in this process be included for the involved worker.

The relationship between the radiation doses and the various documents discussed in the first paragraph of Section 5.10.1 is very confusing. We recommend this paragraph be clarified.



Department of Energy
Richland Operations Office
P.O. Box 550
Richland, Washington 99352

DOE/EA-1189

OCT 05 1998

98-EAP-540

Ms. Mary Lou Blazek
Administrator, Nuclear Safety Division
Oregon Office of Energy
625 Marion St. NE
Salem, Oregon 97310-0830

Dear Ms. Blazek:

ENVIRONMENTAL ASSESSMENT (EA) FOR THE NON-THERMAL TREATMENT OF
HANFORD SITE LOW-LEVEL MIXED WASTE

The U.S. Department of Energy, Richland Operations Office (RL), has received your comments on the Environmental Assessment (EA) for the Non-Thermal Treatment of Hanford Site Low-Level Mixed Waste and would like to thank you for taking the time to review the document.

Attached is a verbatim listing of all comments received and responses to the comments. Where appropriate, the responses include an indication of changes made or not made to the EA. If you have any questions concerning the proposed action, please contact Anna Beard, of the Waste Programs Division, at (509) 376-7472.

Sincerely,

A handwritten signature in dark ink, reading "Paul F.X. Dunigan, Jr.", is positioned above the typed name.

Paul F.X. Dunigan, Jr.
NEPA Compliance Officer

EAP-PFXD

Attachment

This appendix provides a verbatim listing of all comments received and responses to the comments. Where appropriate, the responses to comments include an indication of changes made to the EA based on the comments or when changes were not made, why they were not made.

Comment Number: 01*Oregon Office of Energy*

Comment: Section 1.1 needs more clarification on the 2600 cubic meters (m³) selected for evaluation. Since the paragraph states that it is uncertain which waste packages would be selected for treatment, and waste characteristics may vary depending on the package, this section needs more discussion as to why this particular hypothetical 2600 m³ of waste makes an acceptable, conservative volume of waste for this assessment.

Response: The text in Section 1.1 was revised in the Final Environmental Assessment to clarify the conservatism of the 2600 cubic meters selected for evaluation.

Comment Number: 02*Oregon Office of Energy*

Comment: Section 4.2 states that the total number of employees at the site would be 200 with 100 involved in Low Level Waste processing and 100 involved in Low Level Mixed Waste (LLMW) processing. However, the paragraph then state that 40 people will be involved directly with the LLMW and 10 people would be indirectly involved. What would be the function of the remaining 50 people? This paragraph needs to be clarified.

Response: There are 50 employees involved in the non-thermal treatment operations as stated (40 + 10). The “remaining 50 people” are involved with the thermal treatment operations, which are not in the scope of this analysis.

Comment Number: 03*Oregon Office of Energy*

Comment: It is unclear why a two step process was used to determine air emission estimates in Section 5.1.1. Why weren't the estimates in the ATG risk assessment work plan for the non-thermal treatment facility used directly? This needs to be clarified.

Response: The air pollutant concentrations for this EA were scaled from the air modeling in Tetra Tech (1996a), as explained in Section 5.1.1. The estimates in the ATG risk assessment work plan were selectively used to support the EA for constituents relevant to the Hanford Waste Stream. Detailed information is available in the administrative record.

Comment Number: 04*Oregon Office of Energy*

Comment: The Surplus Plutonium Disposition Draft Environmental Impact Statement states that no lead emission sources had been identified at Hanford. However, Table 5.1 indicates that the non-thermal treatment facility would be a source of lead emission. We recommend that this information be communicated to Mr. Howard Canter, Acting Director, Office of Fissile Materials Disposition.

Response: ATG is a private facility located off the Hanford Site and is not within the scope of the Surplus Plutonium Disposition Draft Environmental Impact Statement.

Comment Number: 05

Oregon Office of Energy

Comment: Section 5.1.2.1 states that waste containers will have surface radiation doses up to 200 mrem/hr while Section 1.1 defines contact-handled LLMW as waste in containers with surface radiation doses of less than 200 mrem/hr. These inconsistencies need to be corrected.

Response: The text in Section 5.1.2.1 and Section 1.1 was revised in the Final EA for clarity and consistency.

Comment Number: 06

Oregon Office of Energy

Comment: Section 5.1.2.1 states: ‘The model default parameters provided a bounding population estimate for some on-site portions of the transport route where the Hanford Site workforce population is lower.’ How do the model default parameters relate to the remainder of the on-site portions of the transport route and what analysis was done for the off-site portions of the transport route? We recommend these questions be answered in the Environmental Assessment.

Response: The text in Section 5.1.2.1 was revised to account for a more conservative population that could receive a radiological dose resulting from a transportation accident.

Comment Number: 07

Oregon Office of Energy

Comment: Section 5.1.2.2 assumes only 50% of container contents are spilled in a transportation accident and are available to burn. We recommend including some information justifying 50% rather than assuming 100% of the container contents are spilled.

Response: A 50 percent damage ratio for 55-gal. drums impacted in a transportation accident or by heavy equipment was assumed in other Safety Analysis Reports and EISs (i.e., WHC-SD-WM-SAR-058, Rev. 0 [WHC 1993] and The Final EIS for Treatment of LLMW [City of Richland 1998]) and is applicable for this EA.

Comment Number: 08

Oregon Office of Energy

Comment: We recommend information be included on what criteria were used to “provide a conservative prediction of potential health effects” as discussed in Section 5.1.2.2, page 28. For example: Were the possible chronic health effects considered or just the acute effects?

Response: Since the evaluated health effects in Section 5.1.2.2 were from a postulated accident only acute health effects were considered. This is appropriate for evaluating accidents because of the acute exposures associated with accidents. Radiological health effects from the acute exposure were based on a 70-year dose commitment period.

Comment Number: 09*Oregon Office of Energy*

Comment: The final footnote for Table 5.3 and 5.4 does not appear to refer to anything in the tables. We recommend this be clarified.

Response: The tables were revised to make an association between the footnote and the table.

Comment Number: 10*Oregon Office of Energy*

Comment: The Involved Worker Radiological Consequences from Normal Operations portion of Section 5.2.1 states the dose-to-risk conversion factor used to calculate the Latent Cancer Fatality risk was taken from the 1990 recommendations of the International Commission on Radiological Protection. The Non-Involved Worker and General Public Radiological Consequences from Normal Operations section references the 1977 version of the same document. The reason for this difference needs to be clarified.

Response: The text in Section 5.2.1 was revised for clarity. It should be noted that there is a distinction between ICRP Publication 26 (ICRP 1977) and ICRP Publication 60 (ICRP 1991). The EDE calculations were based on ICRP 1977, and the dose-to-risk conversion factors were based on ICRP 1991.

Comment Number: 11*Oregon Office of Energy*

Comment: The Non-Involved Worker and General Public Radiological Consequences from Normal Operations portion of Section 5.2.1 states that the radionuclide source term used was based on a production rate of 870 cubic meters per year. Include in this section the basis for this number.

Response: If 2,600 m³ are processed in 3 years then the production rate for 1 year would be one-third of 2,600 m³ or 870 m³ per year.

Comment Number: 12*Oregon Office of Energy*

Comment: In several places the Environmental Assessment (EA) explains release fractions for combustible materials are based on experimental data obtained when various types of packaged waste contaminated with various substances was burned. We recommend that you include in the EA a discussion of how well this surrogate waste and the experimental conditions correlate to the actual waste and the actual conditions. Also, include a discussion on what assumptions were made to off-set any non-conservative differences between the actual situation and the experimental set up.

Response: The drum accident evaluated in this EA is the same drum accident referenced in the Central Waste Complex Interim Safety Basis (HNF 1997). Therefore, the same release fractions were used based on similar combustible materials.

Comment Number: 13*Oregon Office of Energy*

Comment: Section 5.2.1 does not discuss chemical consequences to involved workers from normal operation. Paragraph two of this section contains the statement: “Risk to the involved workers would be from direct exposure to radiation from non-thermal treatment operations during the day. Chemical and radiological emissions are from a stack, and it is therefore assumed that the plume passes overhead.” We recommend that a discussion of the consequence of handling the chemicals to be used in this process be included for the involved worker.

Response: The text in Section 5.2.1 was revised to include a more detailed discussion of the risk to the involved worker from chemical exposures.

Comment Number: 14*Oregon Office of Energy*

Comment: The relationship between the radiation doses and the various documents discussed in the first paragraph of Section 5.10.1 is very confusing. We recommend this paragraph be clarified.

Response: The text in Section 5.2.1 was revised, and a table was added for clarity.

REFERENCES

HNF 1997. Central Waste Complex Interim Safety Basis. HNF-SD-WM-ISB-007, Rev. 1. Fluor Daniel Northwest. Richland, Washington. March 1997.

ICRP 1991. International Commission on Radiological Protection. 1990 Recommendations of the International Commission on Radiological Protection. ICRP Publication 60. Pergamon Press. New York. 1991.

ICRP 1977. International Commission on Radiological Protection. Recommendations of the International Commission on Radiological Protection. ICRP Publication 26. Pergamon Press. New York. 1977.

WHC 1993. Final Safety Analysis for Contact-Handled, Transuranic Waste Drum In Situ Inspection and Vented Drum Retrieval. WHC-SD-WM-SAR-058, Rev. 0. Westinghouse Hanford Company. Richland, Washington. May 1993.